Continuous Descent Arrivals (CDA) Workshop #2

FAA Operational Evolution Plan (OEP): Version 8 – CDA Core & Ring elements

Presented to: EIPT Ops Panel & guests

By: Sandy Liu, FAA Office of Environment & Energy

Date: April 18, 2006

Federal Aviation Administration

Continuous Descent Arrival (CDA)

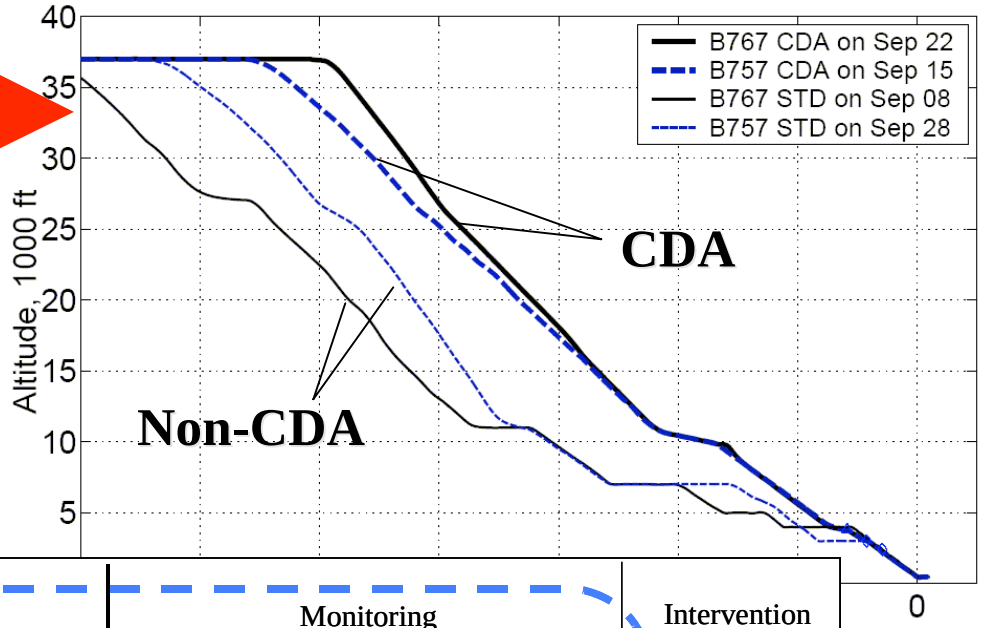
- **Define CDA**
- **UPS Programs:**

  - Environmental benefits

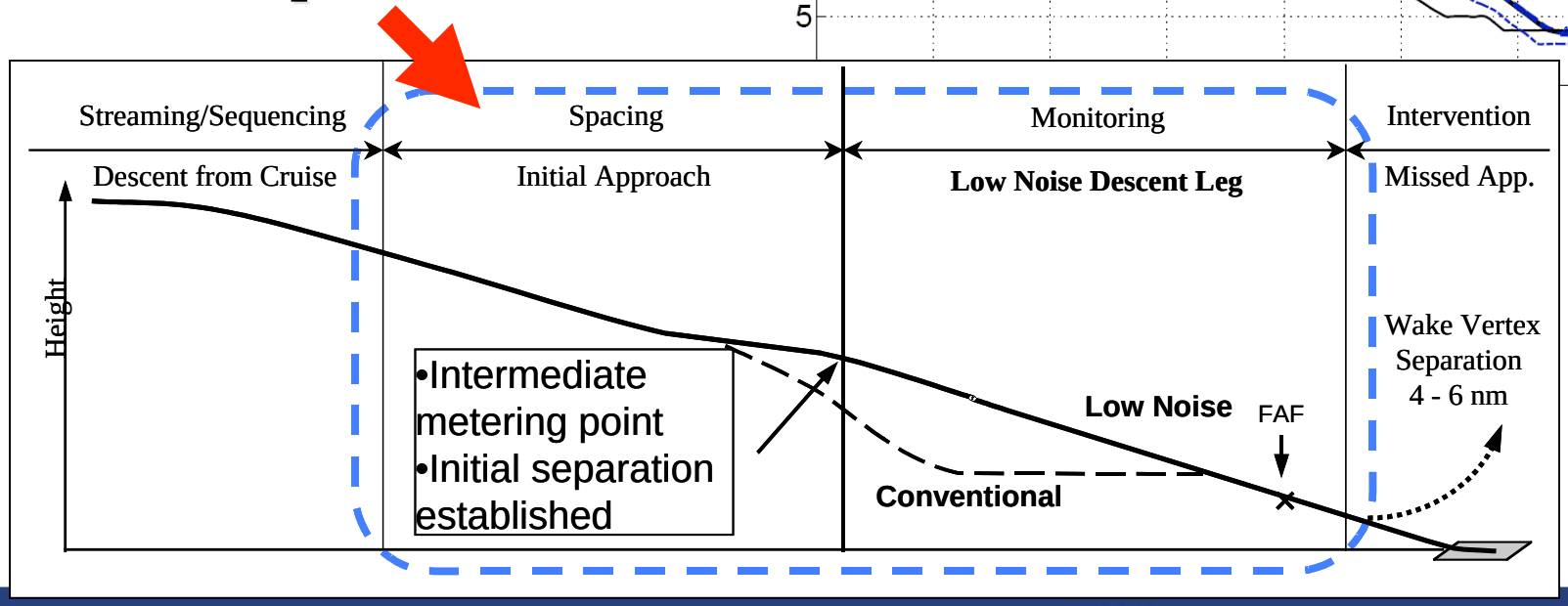
  - Supplemental Flight Efficiencies (by Airline Ops Cntr)
- **Proposed Core (implementation) & report to Ring (R&D)**
- **FLOW-4: FY07 LOB commitment to CDA "Concept of Operations" development**

CDA Procedure

Demonstrated CDA



Conceptual CDA



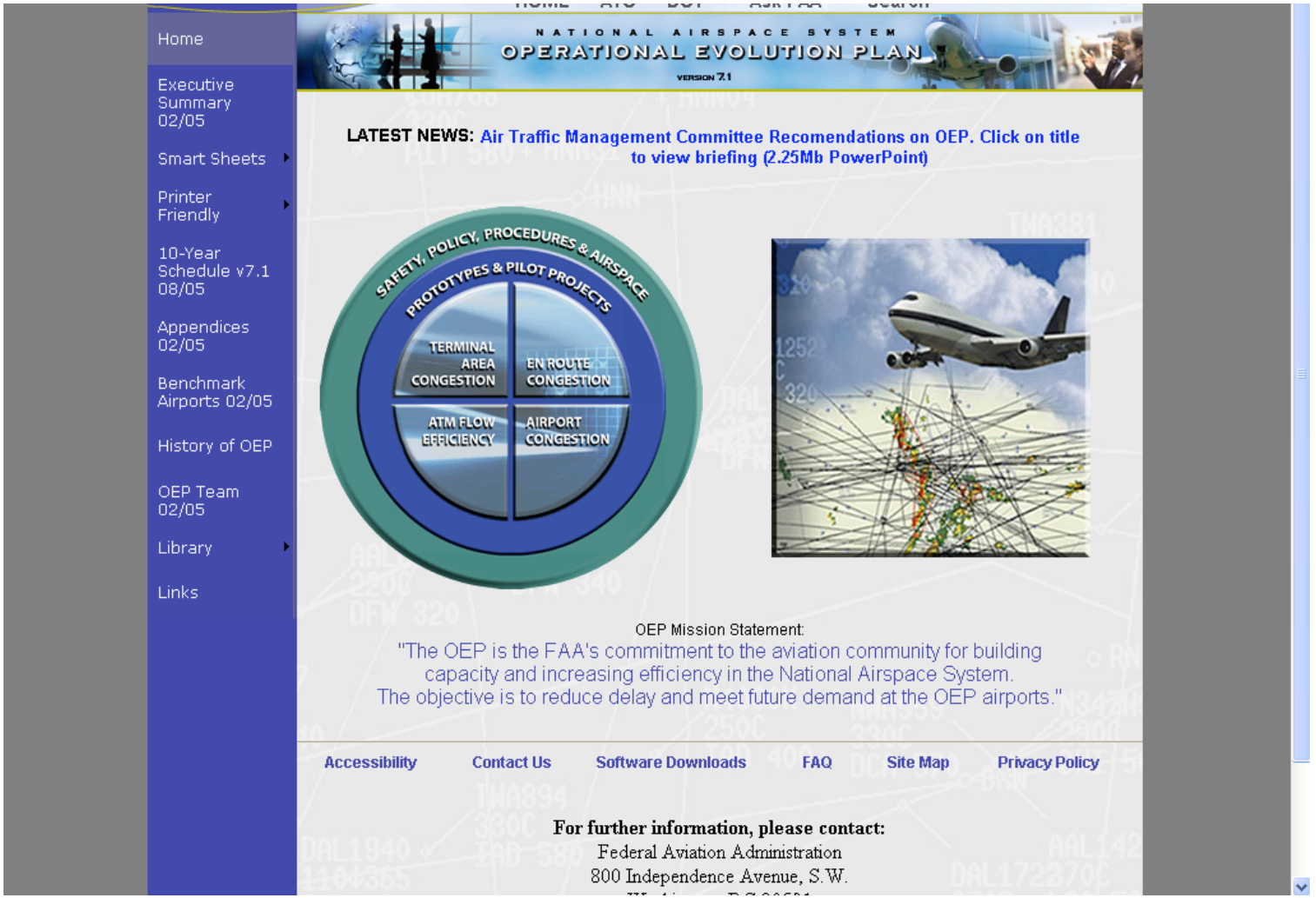
CDA - Definition (USA)

A CDA is an flight procedure where the vertical profile of an arrival has been optimized so that it can be flown with engines "idle" from a high altitude (potentially from cruise) until touch down on the runway.

i.e. Standard Terminal Arrival (STAR) with an optimized vertical profile.

Does not include "step downs" or intermediate level flight operations as in current STARs.

http://www.faa.gov/programs/oep/index.htm



OEP CDA Coordination

CORE: (Primary Office of Delivery: Carl Burleson)

- **CDA procedures can follow the "Special" process.**
- **The AOC approach to enhancing efficient aircraft "Streaming" is transparent to FAA and viable.**

RING: (POD: James McDaniel – Safe Flight - 21)

- **Advance and demonstrate CDA for high traffic conditions:**
  - **Prescribe CDA safe separation at LAX**
  - **CDA design for use in Corner Post at ATL**
- **Investigate the CDA "Pilot Discretion" opportunities within NAS.**
- **Coordinate CDA experience with industry through workshops.**

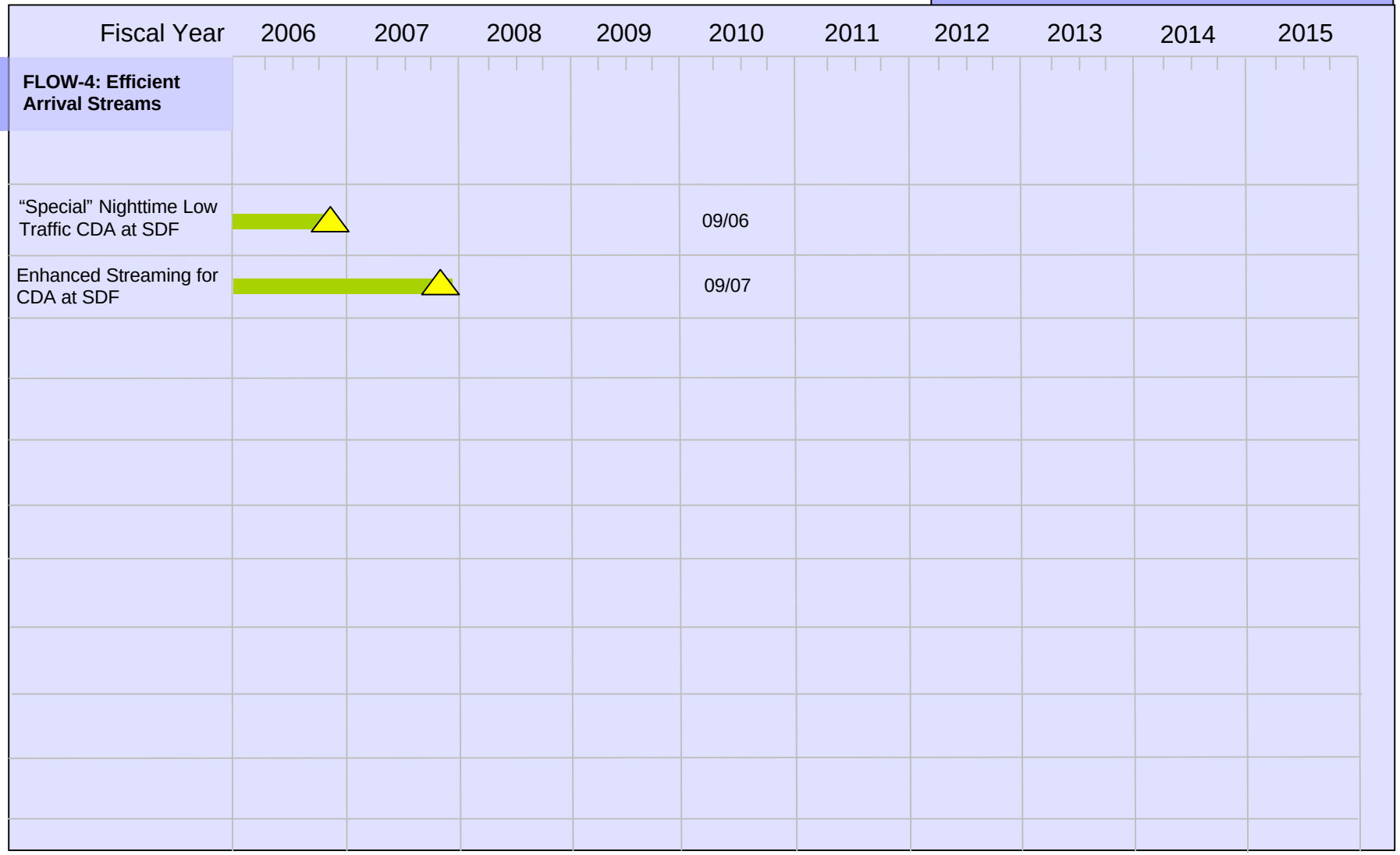
Core Status

- **UPS "Special" application for basic CDA procedure at Louisville airport is under FAA review for acceptance. Target approval/implementation 4th Qtr 06.**

- **UPS Arrival Stream Modernization – AOC to aircraft uplink with speed guidance while enroute. Target implementation 4th Qtr 07. Initial testing on May 8-11, 2006 to demonstrate and assess performance with uplink capability.**

OEP Commitments: *Target date* Hard date Completed Slip date

ATM Flow Efficiency



DRAFT

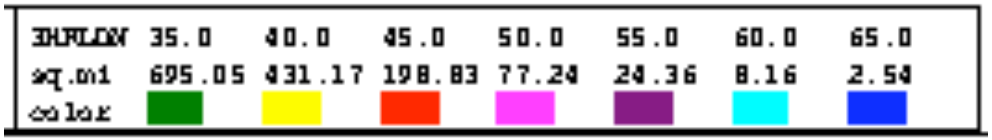
Ring Status

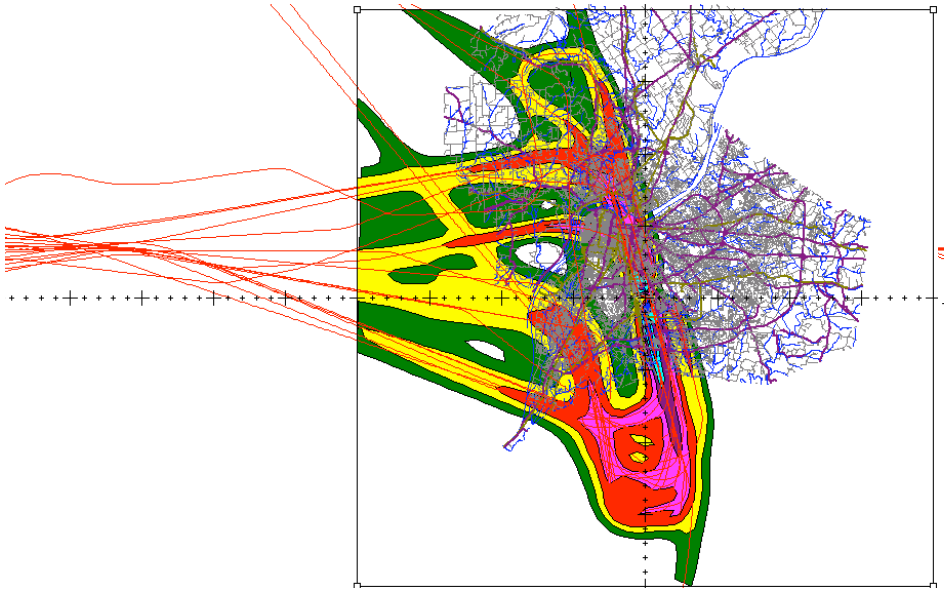
- **Basic CDA procedures being adapted for high traffic situations and the broader “pilot discretion” opportunities.**

- **Pursuing “Concept of Operation” development for CDA to initiate in FY07 with LOB support from AJT, AVS, and AGC.**

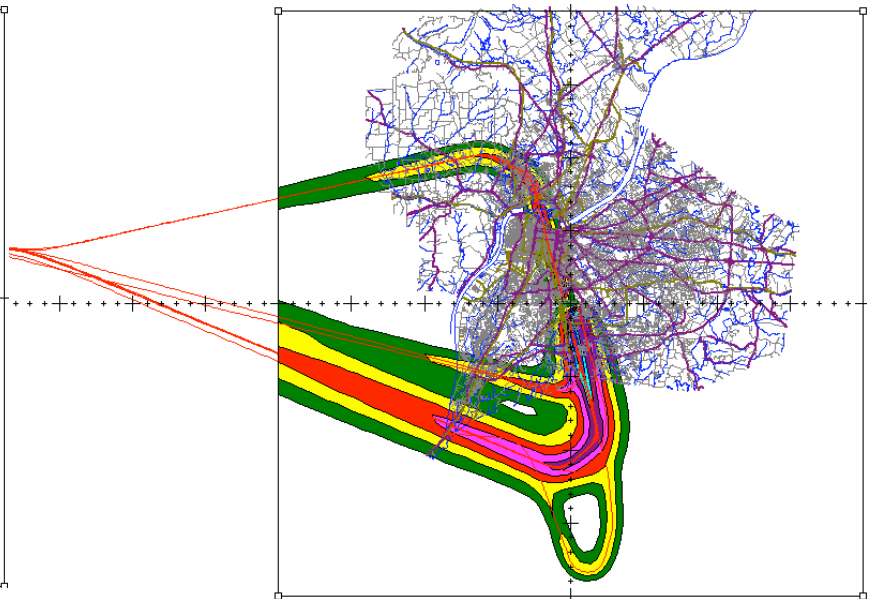
FINDINGS –Noise Exposure Contour

Before





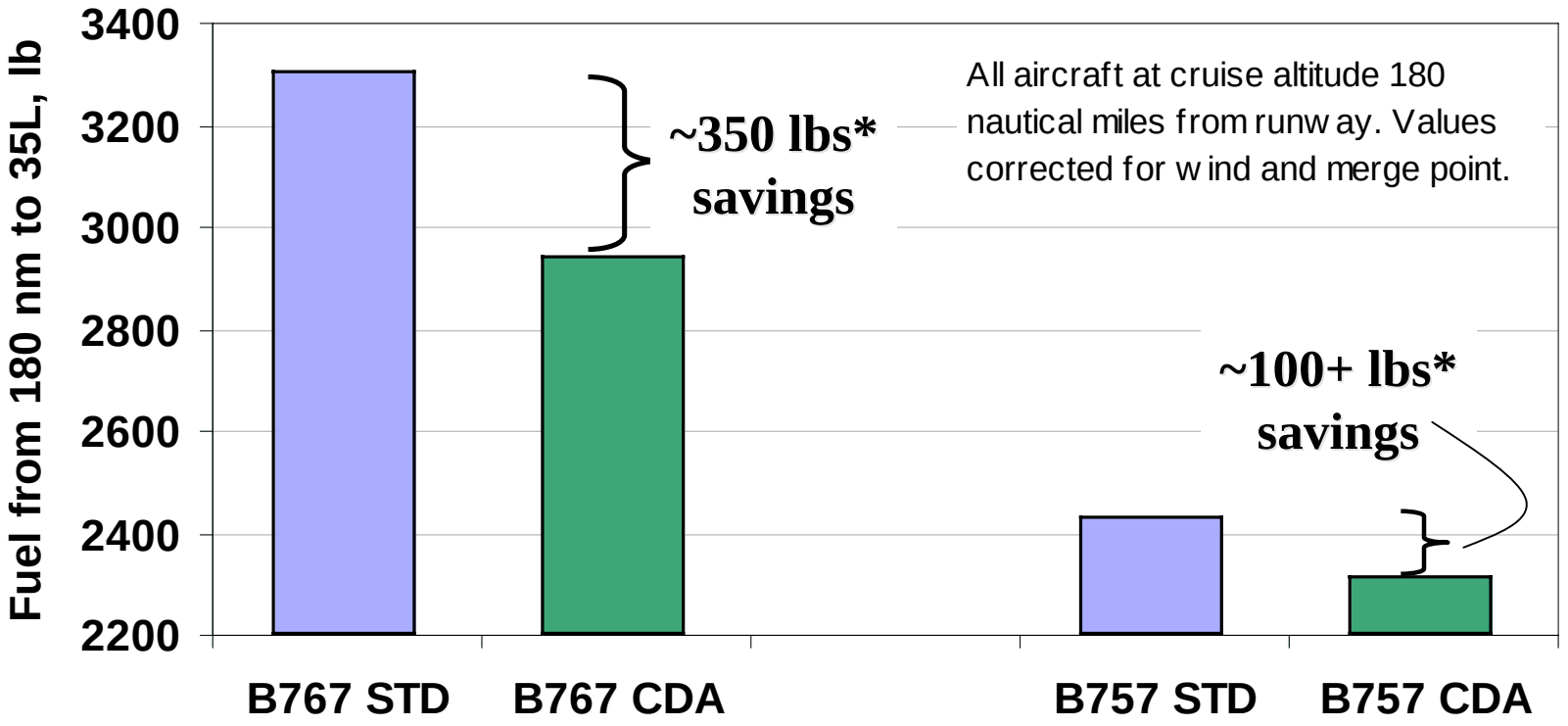
After



CDA reduces noise impact area.

FINDINGS – Fuel Burn

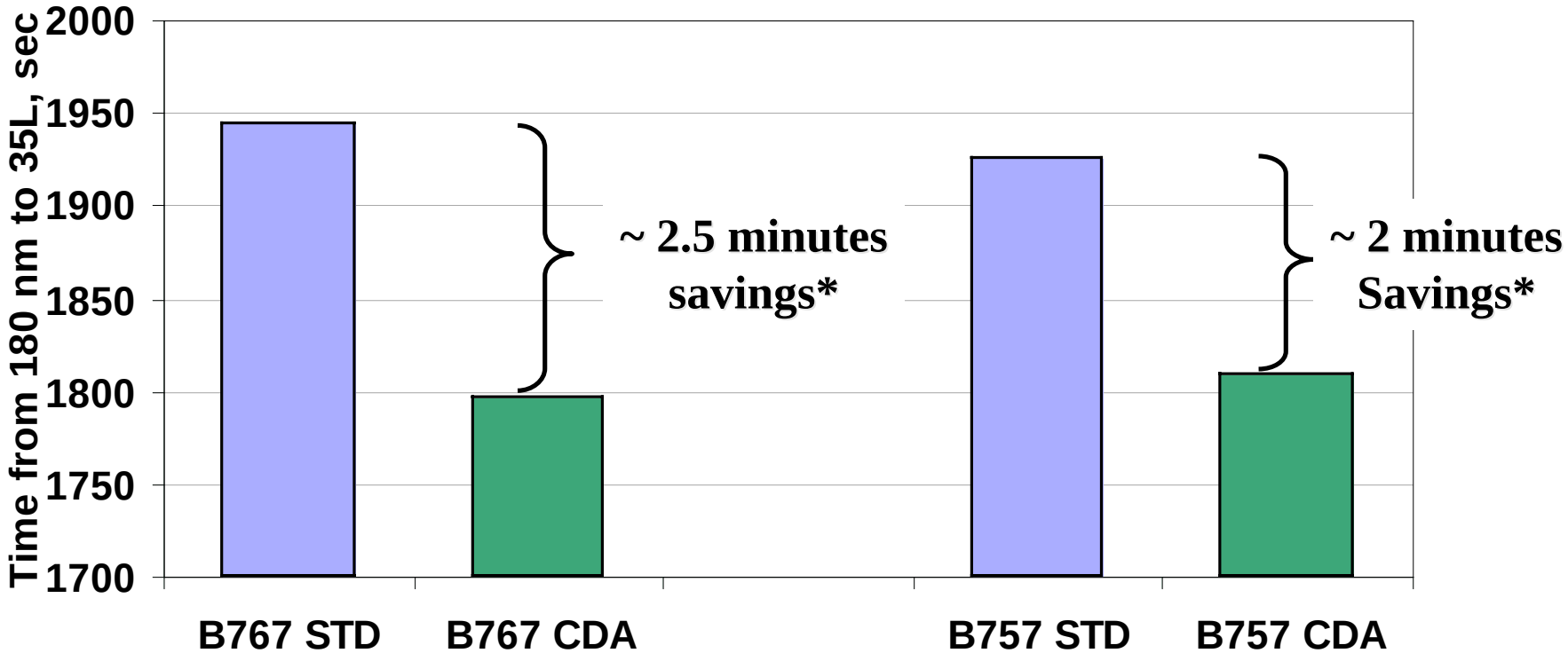
CDA reduced the average fuel consumed.



* The significant savings indicated are well above the variability of the measured data. However, the absolute savings shown are only representative samplings and are dependent on the specific aircraft configuration, operations, and weather factors.

FINDINGS – Flight time

CDA reduced the average time to fly
(from last 180 nautical mile to runway).



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Preliminary UPS Cost/Benefit

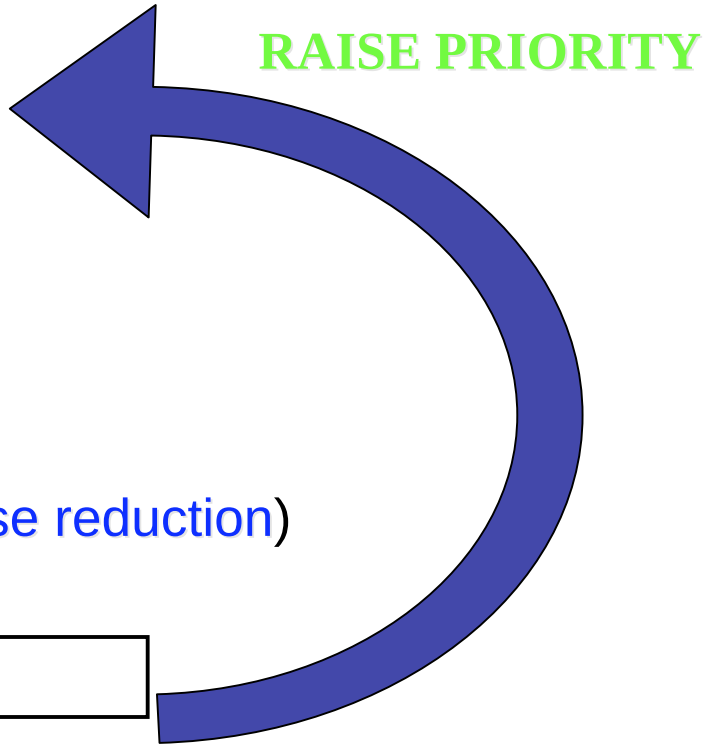
Theoretical Fuel and Cost Savings-Annual

	B-757 279 lbs/flt*	B-767 465 lbs/flt*	Total		
			Fuel Savings	Annual Dollar Savings	
				$1.00/ gallon	$1.50/ gallon
West Coast Arrivals 12-13 Aircraft/Night	49,800 Gallons	111,740 Gallons	161,540 Gallons	$161,540	$242,310
Next Day Air Outbounds 80%	201,250 Gallons	186,444 Gallons	387,694 Gallons	$387,694	$581,541
Total	251050 Gallons	298,184 Gallons	549,234 Gallons	$549,234	$823,851

Flight Procedures Management Program (Order 8260.43A) - continued

Priority:

1- correct safety deficiency
2- new installed nav aid or runaway
3- FAA initiative (Flight Plan)
4- airport w/ no existing IFR
5- reduction in TO/landing minima
6- eliminate requirement for NOTAM
7- flow improvement
8- other benefits (new criteria or noise reduction)
9- Public procedures
10- Special or Private procedure



CDA Workshop II – Outcome Goals

1. **Identify a preliminary list of 10 operators and airports with low traffic that could benefit from CDA "pilot discretion" procedures.**
2. **Agree that two options practical to pursue:**
   - Procedural (VNAV) approach
   - "Special" charted procedure
3. **Feedback to TARGETS (adapt CDA characteristics)**
4. **Agree on a data format/set to support business and procedure application submissions.**